

## PATENT COOPERATION TREATY

PCT/JP2003/012357

## PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference FP03-0286-00	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International application No. PCT/JP2003/012357	International filing date (day/month/year) 26 September 2003 (26.09.2003)	Priority date (day/month/year) 26 September 2002 (26.09.2002)	
International Patent Classification (IPC) or national classification and IPC H01L 21/312, C08G 79/08, C09D 185/04, H01L 21/768			
Applicant HITACHI CHEMICAL CO., LTD.			

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a.  (*sent to the applicant and to the International Bureau*) a total of \_\_\_\_\_ sheets, as follows:

sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b.  (*sent to the International Bureau only*) a total of (indicate type and number of electronic carrier(s))  
\_\_\_\_\_, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input checked="" type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

Date of submission of the demand 09 April 2004 (09.04.2004)	Date of completion of this report 13 December 2004 (13.12.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2003/012357

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- This report is based on translations from the original language into the following language \_\_\_\_\_, which is language of a translation furnished for the purpose of:
- international search (under Rules 12.3 and 23.1(b))
  - publication of the international application (under Rule 12.4)
  - international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

- The international application as originally filed/furnished

- the description:

pages \_\_\_\_\_, as originally filed/furnished  
 pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- the claims:

pages \_\_\_\_\_, as originally filed/furnished  
 pages\* \_\_\_\_\_, as amended (together with any statement) under Article 19  
 pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- the drawings:

pages \_\_\_\_\_, as originally filed/furnished  
 pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3.  The amendments have resulted in the cancellation of:

- the description, pages \_\_\_\_\_
- the claims, Nos. \_\_\_\_\_
- the drawings, sheets/figs \_\_\_\_\_
- the sequence listing (*specify*): \_\_\_\_\_
- any table(s) related to sequence listing (*specify*): \_\_\_\_\_

4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- the description, pages \_\_\_\_\_
- the claims, Nos. \_\_\_\_\_
- the drawings, sheets/figs \_\_\_\_\_
- the sequence listing (*specify*): \_\_\_\_\_
- any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/JP 03/12357

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	1-20	YES
	Claims		NO
Inventive step (IS)	Claims	4-12, 14-15, 20	YES
	Claims	1-3, 13, 16-19	NO
Industrial applicability (IA)	Claims	1-20	YES
	Claims		NO

## 2. Citations and explanations

Document 1: JP 2000-340689 A (Mitsubishi Electric Corp.), 8 December 2000

Document 2: EP 881678 A2 (Texas Instruments Incorporated), 2 December 1998

Document 3: JP 2002-43308 A (Hitachi Chemical Co., Ltd.), 8 February 2002

Document 4: JP 2002-155143 A (National Institute of Advanced Industrial Science and Technology), 28 May 2002

Claims 1-3

The invention set forth in claims 1-3 does not involve an inventive step in the light of document 1 cited in the international search report. Document 1 does not mention a "Young's modulus of 5GPa or more" and a "leakage current of  $1 \times 10^{-8} \text{A/cm}^2$  or less". However, it is preferable for an interlayer insulating film to have a high Young's modulus and a low leakage current. Consequently, it would be easy for a person skilled in the art to apply this feature.

Claims 4-7

The invention set forth in claims 4-7 involves an inventive step in relation to the documents cited in the international search report. Documents 1-4 do not disclose

the feature wherein a second insulating coating containing a compound having a borazine skeleton within the molecular structure is provided on a first insulating coating containing a siloxane resin.

Claims 8-12, 14 and 20

The invention set forth in claims 8-12, 14 and 20 involves an inventive step in relation to the documents cited in the international search report. Document 4 does not disclose the feature wherein "polymerisation is carried out in the presence of a solid catalyst" or the feature wherein "particulate scavengers that adhere metal components derived from a metal catalyst are added to a polymer system that has been subjected to the aforementioned first process."

Claims 13 and 16-19

The invention set forth in claims 13 and 16-19 does not involve an inventive step in the light of document 1 cited in the international search report. Document 1 does not specifically indicate that "the solid concentration is 0.5% by mass or greater". However, the numerical range of a "solid concentration of 0.5% by mass or greater" in a composition that is used as a coating liquid for forming an insulating film is one commonly used. Consequently, it would be easy for a person skilled in the art to conceive of applying this feature.

Claim 15

The invention set forth in claim 15 involves an inventive step in relation to the documents cited in the international search report. Document 1 does not disclose a polymer having repetitive units represented by formula (2). Moreover, document 4 does not disclose a composition wherein "the content of metal impurities is 30ppm or

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

International application No.  
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less."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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## Box No. VI Certain documents cited

## 1. Certain published documents (Rule 70.10)

Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
JP 2002-359240 A	13 December 2002 (13.12.2002)	15 March 2002 (15.03.2002)	27 March 2001 (27.03.2001)

[E, X]

## 2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non-written disclosure (day/month/year)